MAIL STOP AF
PATENT
8003-1016-1

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of

Hiroshi YAMANE et al. Conf. 5695

Application No. 10/766,910 Group 1725

Filed January 30, 2004 Examiner Len Tran

METHOD AND APPARATUS FOR CONTINUOUS CASTING OF METALS

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Assistant Commissioner for Patents June 8, 2006
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

Applicants requests a pre-appeal brief review of the final rejection in the above-identified application. No amendments are being filed with this request.

A Notice of Appeal is filed herewith.

The review is requested for the reasons advanced on the attached sheets.

Respectfully submitted,

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REASONS IN SUPPORT OF REQUEST FOR REVIEW

A pre-appeal brief review is respectfully requested as the rejections of claims 1-5 and 10-14 include at least a clear factual error, or, in the alternative, a clear legal error.

Applicants request review of the final rejection of claims 1-5 and 10-14 as anticipated by JP 6182518 ("JP '518"). Claims 1, 4, and 10 are independent.

Claim 1 requires "electromagnets each comprising an iron core and a coil wound over said iron core, …; and means for supplying a single-phase AC current to each coil." Claim 4 requires "a coil supplied with a DC current for producing a DC magnetic field and a coil supplied with a single-phase AC current for producing a non-moving, vibrating magnetic field, both said coils being wound over each of common iron cores". Thus, claims 1 and 4 each recite that the AC being supplied to the coils is a single phase AC current.

The Examiner graciously conducted an interview in the case and there is no disagreement that JP '518 does not disclose a single-phase AC power supply. Rather, the Examiner feels compelled to reject the claims, stating that JP '518 "is capable of generating a single phase and continuous" (last sentence of OA page 2 and page 3, Response to Arguments). Applicants disagree.

JP '518 does not disclose the recited structure, and the Examiner has acknowledged that JP '518 does not disclose the recited structure, i.e., in the statement that JP '518 "is capable" of performing as recited. However, the Examiner has not shown that JP '518 can perform as recited or offered any proof thereof; JP '518 is disclosed as structurally different from the present invention; and since there is no basis for asserting that JP '518 is capable of performing as recited, JP '518 is structurally different from the claimed invention since JP '518 can not perform as the recited means for supplying a single-phase AC current to each coil.

The Examiner is relying on a machine translation of a Japanese reference, which machine translations are known to be of poor quality, and the Examiner is therefore speculating as to what JP '518 actually discloses and what alternative operation is possible.

In an effort to explain JP '518, applicants have pointed out that the method and apparatus disclosed in JP '518 are based on the method disclosed in Fujisaki et al.: "Fundamental Electromagnetic Characteristics of In-Mold Electromagnetic Stirring in Continuous Casting", a report from "International Symposium on Electromagnetic Processing of Materials", 1994, Nagoya, ISIJ (Iron and Steel Institute of Japan), pages 272 to 277.

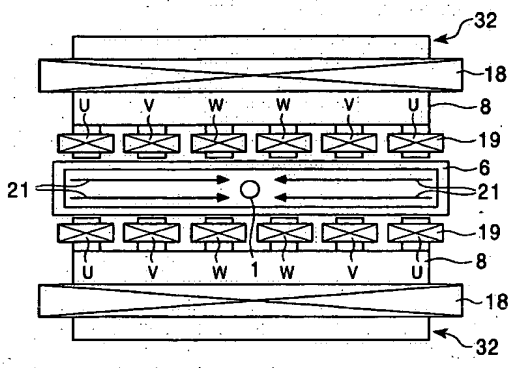
JP '518 discloses a multi-phase discontinuous AC power source created from pulsing DC (see Figure 6). As disclosed in paragraph [0012], each electric coil is linear motor energization by m-phase AC power source (specifically explained using the case of m=3), where m >= 3 (paragraph [0007]). Specifically, the waves of electric current shown in Figure 7 are supplied to the JP '518 coils as disclosed in [0021], [0023], [0024], [0031] and [0032].

Further, the statement that JP '518 "is capable of …" is, at best, a statement that JP '518 could be modified to generate a single phase AC current and this is itself an implicit acknowledgement that there is no disclosure of providing the coils with a single phase AC current. Thus, there is no anticipation as to claims 1 and 4.

Additionally, claim 4 requires "a coil supplied with a single-phase AC current for producing a non-moving, vibrating magnetic field". The Examiner has not addressed the "non-moving, vibrating magnetic field" recitation and this feature is not disclosed by JP '518.

Claim 10 requires "a first coil for producing an AC magnetic field moving in a longitudinally symmetrical relation from opposite ends to a center of said mold along a longitudinal width thereof, …". See Figure 17A, reproduced below:

FIG. 17A



JP '518 does not disclose such a first coil but rather discloses an arrangement providing a magnetic field driving force from one end to the other end (Drawing Figure 8(b)). Nor is there any basis for asserting the JP '518 is "capable" of being configured as recited.

Features of the dependent claims are also not disclosed.

Claim 3 requires "said iron core comprises a comb-shaped iron core having a comb-teeth portion over which said [AC] coils are wound and a root portion over which a second [DC] coil is wound,".

The Examiner (OA page 2) states that JP '518 discloses both AC and DC current are wound on the same core. But this is not what is recited, and JP '518 does not disclose/suggest the recited comb-shaped iron core that has the coil for AC current wound over the comb-teeth portion and the coil for DC current wound over the root portion.

Claim 12 requires the means for supplying a single-phase AC current is a means for supplying continuous single-phase AC current. Claim 13 also requires a continuous current. Since JP '518 produces discontinuous AC waveforms, there can not be any continuous AC current.

Summary

JP '518 does not disclose an apparatus "capable of generating a single phase and continuous" as asserted on OA page 2. Rather, JP '518 discloses a three phase AC power source, the AC being discontinuous. Further, JP '518 does not disclose i) "a coil supplied with a single-phase AC current for producing a non-moving, vibrating magnetic field"; ii) "a first coil for producing an AC magnetic field moving in a longitudinally symmetrical relation from opposite ends to a center of said mold along a longitudinal width thereof, …"; iii) a comb-shaped iron core that has the coil for AC current wound over the comb-teeth portion and the coil for DC current wound over the root portion; or iv) a means for supplying continuous single-phase AC current.

Therefore, there is i) clear factual error as JP '518 fails to disclose that for which it has been offered, and ii) a clear legal error as to anticipation as the references fail to disclose each recited feature of the invention. In view of this, the anticipation rejection cannot be sustained and must be reversed; such is respectfully requested.